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PART II - SECOND ANNUAL REPORT

November 1973

Senator Elmer Flynn
Chairman

Fletcher E. Newby
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ENVIRONMENTAL EFFORTS IN THE 1973 LEGISLATURE

by

Rick Applegate
Research Consultant

Environmental measures flooded the 1973 legislature. By the end of the 60-day regular and 12-day special sessions, a substantial body of environmental law had been enacted.

Under the new Montana constitution the legislature meets annually as part of a biennial session, with opportunity to hold measures for study in the session interim. The 1973 legislature used this situation advantageously, and a sizeable number of bills are in various stages of consideration pending further action in 1974. A number of other measures, some containing important environmental concepts, were killed. The major enacted and held-over bills are discussed below.

Coal/Energy Development

Coal and related energy development were the salient environmental issues in the 1973 assembly. Nearly 30 bills directly relating to coal development were introduced. They ranged from a measure allowing state agency assistance to Indian tribal councils on coal matters to a bill prohibiting strip mining for coal.

The growing attention focused on Fort Union formation coal is only part of an increasingly understood state, national, and international energy crisis. President Nixon has acknowledged the dilemma and initiated establishment of a national energy policy. Montana coal, water, and air figure prominently in that policy. If Montana is to be a full partner in the formulation and implementation of a national energy policy, some serious policy and ecosystem research needs to be done.

State Energy Policy Study

The legislature acknowledged the need for a state energy policy by adopting SJR 24, which directs the EQC to conduct a study and proposed legislation for establishment of a state energy policy. For a detailed explanation of the study, see "Montana's Energy Policy Study," by Walter I. Enderlin.

Facilities Siting

One of the most important pieces of legislation ever enacted by a Montana legislature is HB 127. In response to the uncertain threat of massive coal/energy development in eastern Montana, the Legislative Council, the EQC, the Coal Task Force, and the governor proposed the country's strongest utility siting measure.

Legislative findings in the act reveal a guarded approach to siting:

> The legislature finds that the construction of additional power and energy conversion facilities may be necessary to meet the increased need for electricity and other energy.... No power or energy conversion facility shall hereafter be constructed or operated within this state without a certificate of environmental compatibility and public need....

The act applies to energy generating and conversion plants that could generate 50 megawatts or produce 50,000 barrels of liquid hydrocarbon products a day; to any addition to plants if their estimated cost exceeds $250,000; to associated facilities such as railroads, diversion dams, and aqueducts; and to uranium enrichment plants. Transmission lines with a design capacity of 34.5 kilovolts or more (with some exceptions) also are regulated. Routine administration of the act is funded by a .25 percent surtax on electrical energy producers.

Applications for a permit to construct a facility must be filed with the Montana Department of Natural Resources and Conservation at least two years before anticipated construction. Besides describing the facility's location and environmental impact, the application must outline the need for the facility. This important necessity presumption may be a focal point for controversy over utility decisions. The application must be accompanied by a fee ranging from .1 percent to 3 percent, depending on the facility's cost.

Upon receipt of the application, the department initiates an intensive 600-day study of the environmental and socio-economic effects of the proposed facility. The Departments of Health and Environmental Sciences, Highways, Fish and Game, Intergovernmental Relations, and Public Service Regulation all contribute. Factors the departments must consider include energy needs, alternative sources, utility promotional activities, energy conservation, impacts on land, existing socio-economic and cultural patterns, and water resources.

When the study period is over, the Board of Natural Resources may not grant a certificate to the applicant unless the need for the facility has been determined and its probable adverse environmental impact has been minimized. The board also must receive prior certification from the Department of Health and Environmental Sciences that state and federal air quality standards will not be violated.

The siting act also includes general planning requirements. Utilities must submit by April 1 of each year a long-range plan covering projected utility construction for the next decade. These reports must include projections of the demand for service and explanation of the basis for the projections. Any projects listed to be constructed within five years are studied by the Department of Natural Resources and conservation. Strict civil and criminal penalties accompany non-compliance with any of the act's provisions.

Strip Mining and Reclamation

The Montana Strip Mining and Reclamation Act is reputed to be the strongest legislation of its kind in the nation. At a recent Council of State Governments meeting, much of SB 94 was adopted as model state reclamation legislation. However, the act has been substantially weakened by the attorney general's opinion that a number of preparatory mining-related activities are not covered by the act.

Under the act, an operator must apply for an annually renewable permit from the Department of State Lands. The application must contain a detailed reclamation, revegetation, and rehabilitation plan for the land and water to be affected. The application must be accompanied by a $50 fee and a bond of not less than $200 an acre or more than $2,500 an acre, as determined by the board. Annual prospecting permits also are required and are bonded.

The department cannot approve an application to prospect or mine if information and inspections indicate the act's purposes will not be fulfilled. In addition, an application cannot be approved if the area affected has special, critical, or unique characteristics. These include areas of biological productivity--the loss of which jeopardizes wildlife or domestic stock; areas on which the land could not be returned to its former ecological role; areas that influence the total ecosystem so strongly that even temporary disturbance could have large-scale, system-wide effects; and areas of scenic, historic, archaelogic, geologic, scientific, cultural, or recreational significance. In the administration of these provisions, special attention must be given to the preservation of Plains Indians' history and cultures. Substantial sedimentation, water pollution, and hazard to public facilities also are grounds for denial of a permit to mine.

Reclamation must be completed as rapidly and completely as the current technology will permit. Land must be restored to approximate original contour, and highwall reduction must be to a slope less than 20 degrees. The board can require additional restoration work. Contour mining is prohibited, and topsoil must be segregated. The establishment of stable and diverse vegetation capable of withstanding grazing pressure, erosion, and regeneration to accommodate ecological extremes is required. Annual planting reports also must be filed.

The act provides citizen complaint and suit procedures, civil actions for surface and groundwater damages, and strict civil and criminal penalties for violations. Moreover, all reclamation contracts under prior reclamation laws are cancelled.

Eminent Domain

Severance of surface and mineral ownership received legislative attention in HB 238. Pre-existing eminent domain law permitted a mineral estate owner to condemn the surface to permit recovery of minerals. This 1961 law was primarily a response to the Anaconda Company contention that its open pit mine expansion should prevail over adjacent landowners' occupancy. However, the law was also being used by coal companies in eastern Montana to convince ranchers to sell their lands to the companies or be condemned. HB 238 prohibits the use of eminent domain for a strip or open pit coal mine. All other mining operations are still permitted to condemn under Montana law.

The legislature was concerned that removing condemnation power from one type of mining for one mineral might be deemed unconstitutional, so it included policy findings to illustrate its rationale. The findings include the intensity and scope of the impending development; the encouragement of existing productive uses of the range land; the potential for landowner harassment; and the state's policy of fostering land ownership diversity.

For further discussion of legal complexities and other problems associated with subsurface and surface ownership and eminent domain, see "Underground Natural Resources," by A. W. Stone.

Coal Taxation

Coal taxation was a subject of heated debate in the 1973 sessions. HB 97 was enacted, creating a resource indemnity trust fund. The measure is intended to provide financial security against environmental damage from the extraction of essentially nonrenewable resources. A tax is imposed on the gross market value of all precious stones, gold, silver, copper, coal, lead, petroleum, natural gas, oil, uranium, and other nonrenewable resources. The tax is $25 plus .5 percent of the gross value if gross value exceeds $5,000. Money collected can be invested by the Board of Investments. All net earnings, interest, and dividends from the investment are kept until the account reaches $10 million. Thereafter, net earnings may be appropriated and spent "to improve the total environment and rectify damage thereto" until the account reaches $100 million. From that point, receipts and net earnings can be expended providing the account balance exceeds $100 million.

Trust Funds

A bill was introduced to make this trust "irrevocable," that is, to elevate it to constitutional status so that trust funds cannot be randomly expended by succeeding legislatures. The bill, HB 576, is currently held over.

Strip Mine License Tax

Changes in the coal strip mine license tax are contained in HB 509. Actually, the tax is a production tax, not a license tax. Coal is taxed according to its weight and British thermal unit (Btu) rating; 12 cents a ton for 7,000 Btu or fewer, 22 cents for 7,001 to 8,000 Btu, 34 cents for 8,001 to 9,000 Btu, and 40 cents for more than 9,000 Btu. The first 5,000 tons are exempt. A pre-existing tax credit for reclamation work was repealed.

Coal Resource Conservation

The Strip Mined Coal Conservation Act (SB 404) was enacted to prevent waste of the coal resource defined as the nonutilization of strippable and marketable coal. The definitions of strippable and marketable coal obscure the law's effectiveness. Strippable coal is coal that can be removed by methods adaptable to the location. Marketable coal is coal that is economically feasible to mine and fit for sale in usual trade. It would seem that if the coal is economically feasible to mine and is fit for sale in the usual course of trade, no operator would want to leave it in the ground. However, a provision in the bill granting the Board of Land Commissioners discretionary authority to prevent waste of coal and implement the act may permit the board to expand the application of the act.

Tribal council assistance

Another coal-related measure permits state agencies to assist Indian tribal councils in coal matters. The bill, SB 426, allows agencies to charge for services rendered on request.

Materials and Minerals

Important materials and minerals measures enacted by the legislature include:

Open Cut Mining

New legislation was enacted to regulate the mining of sand, gravel, or bentonite. The Open Cut Mining Act, SB 443, resembles early statutes regulating strip mining for coal in that the state signs contracts, not permits, for mining. The act covers all operators removing 10,000 or more cubic yards of material and overburden. All operations are bonded between $200 and $1,000 an acre. The law provides for the submission of reclamation plans that cannot be approved by the Board of Land Commissioners unless the land will be reclaimed for one or more uses, such as forest, pasture, orchard, cropland, residence, and habitat. Steps also must be taken to prevent potential acid drainage or sedimentation.

Other requirements include: slopes must be reduced to 3:1 or less; metal or other wastes must be removed; roads must be constructed and maintained to control and minimize channeling and erosion; historic and archaeological values must be protected; and annual progress reports must be submitted by the operator. The commission or its representative is empowered to enter mine lands at all times to inspect and determine whether the act's provisions are being followed. Enforcement mechanisms also are stipulated.

The history behind the Open Cut Mining Act reveals that the act should be scrutinized to determine whether it effectively regulates bentonite operations. Late in the legislative session, bentonite was removed from SB 94 (The Montana Strip Mining and Reclamation Act) and placed in SB 443, which was drafted primarily to regulate sand and gravel operations. The difference between those operations and bentonite mining should be reviewed with the idea of possibly amending SB 443 to more effectively regulate bentonite mining.

Mining claims assessment

The legislature corrected a potentially damaging situation concerning annual assessment work on mining claims by enacting HB 249. Before its enactment, a lode or claim owner had to complete certain annual assessment work (improvements or maintenance) to avoid forfeiture of a claim. By 1971 enactment, this work applied only to 10 or fewer contiguous claims. This was intended to deter the large miner from monopolizing large tracts of land without proceeding with mining. For example, a miner with 53 contiguous claims would have to show assessment work on six of the claims. As discussed in the EQC's First Annual Report, this requirement could lead to unnecessary environmental disruption, merely to avoid claim forfeiture. It would not help the small miner, since owners of large contiguous blocks of claims would not forfeit the claims. HB 249 altered the assessment requirement by allowing assessment work done on one claim to apply to all contiguous claims.

Nuclear energy

Montana was permitted by SB 207 to join the Western Interstate Nuclear Compact (WINC), a broad-ranging study and development group for peaceful nuclear technologies. Recent energy studies, notably the California Rand Corporation study, have cautioned a "go-slow" approach to nuclear energy. The serious and unanswered environmental problems of nuclear energy, particularly the safe disposal of residuals, indicate that WINC activities should be monitored carefully.

Oil, gas severance tax

A severance tax on oil and gas produced in Montana was established by HB 518. The tax is 13 percent of the value of the oil and gas, which is determined by deducting from the market value the value of the oil and gas used in connection with extraction operations, the amount of the capital expenditures, and the costs of the operation and production costs.

The tax is paid to the county treasurer. Ten percent is to be used by the state and 90 percent by the county. With its broad deductions, this tax is somewhat similar to net proceeds taxation. The severance tax poses the same problems as net proceeds taxation because of difficulties in evaluating deductions and computing taxation.

Land Use Planning

Land use planning, often directly intertwined with coal and energy development, is receiving considerably more attention.

Land Use Policy Study

The EQC is directed by HJR 9 to conduct a land use policy study and propose legislation for establishment of the policy. The study is discussed in detail in "Montana's Land Use Policy Study," by Charles E. Brandes.

Subdivision Regulation

Two measures were enacted regulating subdivisions, condominiums, trailer courts, and mobile homes. The Montana Subdivision and Platting Act (SB 208) creates a comprehensive system of local government review of subdivisions. Amendments regulating solid wastes, water, and sewer facilities in subdivisions (HB 465) generally strengthen existing Department of Health and Environmental Sciences authority over water supply and sewer systems. They also require the sanitary disposal of solid wastes and provide for the protection of surface waters for recreation, wildlife, and other uses.

Primarily, SB 208 is aimed at prevention of excessive density and promotion of public and environmental values in subdivisions and certain other land development activities. The act's definition of subdivision ("...the division of land, or land so divided, into two (2) or more parcels, whether contiguous or not, any of which is ten (10) acres or less, exclusive of public roadways, in size....") is unclear and will have to be interpreted by the legislature or the courts. The method of description (metes and bounds, for example) and the method of disposition (contract for deed, for example) do not exempt the transaction from the coverage of the act. Subdivision is defined to include all condominiums, spaces for camping trailers, or mobile homes, irrespective of the size of the tract on which they are situated. (This is another part of the law that is unclear and will have to be interpreted. Specific exemptions from the act's requirements are divisions created by court order or by lien, mortgage, or trust indenture; creating an interest in oil, gas, minerals, or water; creating cemetery lots; constituting a gift to the member of the landowner's immediate family; and creating a lease or rental for farming and agricultural purposes. These exemptions apply only if they are not used to evade the act.

In accordance with the act, the Department of Intergovernmental Relations has prepared and circulated model subdivision rules, minimum requirements, and subject areas to be contained in local governing body regulations. The minimum requirements include the stipulation that the subdivider submit an environmental assessment to the local governing body. The assessment must contain a description of the surface and groundwater affected by the subdivision; a description of the topography, vegetation, and wildlife use within the subdivision; a description of soil types and their suitability for development; a community impact statement describing anticipated needs of the subdivision for local services; and other information required by the department.

By July 1, 1974 local governing bodies must adopt subdivision regulations that reasonably provide for orderly development of their jurisdictional areas and that meet at least minimal department requirements. Should a governing body fail to comply, the department will establish regulations for the area by January 1, 1975. In short, the act provides state back-up to insure that standards are minimally consistent statewide.

Park dedication requirements adopted by the 1971 legislature also are changed by SB 208. Under the act, a plat containing any lot five acres or less must forever dedicate one ninth to the public for parks and playgrounds. Where all lots in a subdivision are greater than five acres and less than 10, one twelfth of the area must be dedicated. No dedication is required for plats on which all lots are greater than 10 acres. Cash donations in lieu of dedication may be accepted by the governing body for good cause shown. However, the fair market value of the unsubdivided, unimproved land is used to determine the amount of the donation. This discourages the dedication of lands. Obviously, a developer can sell a lot for much more than the cash donation on the land valued as unsubdivided and unimproved. In addition, if all parcels are five acres or more and the subdivider will establish a covenant that runs with the land that parcels will never be less than five acres, and that all parcels will be used for single family dwellings, the local governing body may waive dedication and cash donation requirements for good cause shown.

The governing body is required to hold a public hearing and take action on a preliminary plat within 60 days. Other provisions in the act are efforts to insure uniform surveying and monumentation.

HB 465 contains important amendments to existing Department of Health and Environmental Sciences authority to scrutinize subdivision plats. General policy is revised to permit explicit review of sewage and solid waste disposal to protect the quality of water for public, domestic, agriculture, industry, recreation, and wildlife uses. The definition of subdivision is amended from the 1947 definition of "less than five acres" to "10 acres or less" and identical to the definition in SB 208. Metes and bounds transfers or contracts for deed no longer will be exempt from regulation. "Sanitary restriction"--the department's key instrument of regulation--is defined as a prohibition against the erection of any building until the department approves plans for water supply, sewage, and solid waste disposal facilities.

The critical change made by HB 465 is that no map or plat may be filed, no building may be erected or occupied, and no lot may be sold until the local health officer has approved water availability and quality and sanitary facilities, and the state department has indicated the subdivision is not subject to sanitary restriction. Another stipulation that has not been adequately publicized is that as long as a subdivision is conditional, no map or plat may be filed, no building may be erected or occupied, and no lot may be sold.

Substantial detail was added to the department's rule-making duties.

Rules must provide for description of the land and evidence of an available water supply, dependable and sufficient in quality and quantity. Additional sections specify a hearing procedure for aggrieved subdividers and enforcement of the act, as well as penalties for violations.

The implementation of the two laws might create confusion about possible overlaps in jurisdiction. It was argued briefly during the legislature that the measures do not conflict. Health department authority over subdivisions is not diminished. The department will still review plats under its statutory guidelines (water supply and quality, sewage, and solid wastes) and will file environmental impact statements for public review. Concurrently, the Department of Intergovernmental Relations will develop uniform requirements for comprehensive assessment of subdivisions at the local level.

Agricultural assessment

Montana is experiencing a rapid conversion of agricultural lands. Highways, subdivisions, and other sprawl developments irreversibly chew up prime agricultural lands in the Gallatin and Yellowstone valleys and elsewhere. The legislature took some initial regulatory steps in the enactment of SB 72. This measure provides preferential assessment for bona fide agricultural lands if the landowner applies to the Department of Revenue. Agricultural lands can be classified and assessed without regard to a more profitable potential use (subdivision). Eligible lands include lands actively devoted to agriculture and lands of at least five contiguous acres with a gross value of $1,000 or which agriculturally produce 15 percent of the owner's annual gross income. Should the owner decide later to convert the land from agricultural use, the land becomes subject to a "roll-back" tax. In essence, the land will be assessed at its full appraised value in its new use, less credit for taxes actually paid as agricultural land, retroactive for up to four years.

Careful monitoring of SB 72 will be necessary to prevent it from operating as a tax shelter for developers. Alternative approaches to the protection of prime agricultural lands, such as the purchase of development rights and development permit systems, need further consideration.

City-county planning

The legislature added an alternative prerequisite for city zoning and subdivsion regulation beyond the incorporated city limits with the passage of HB 422. Existing law required that a city could use extra-territorial zoning if the city planning board included two representatives of the unincorporated area--only until a master plan is drafted and adopted. HB 422 provides that as an alternative, a city-county planning board might be formed. This could be advantageous, since city-county planning boards are permitted by existing law to zone four miles, and in some cases 12 miles, from the boundaries of an incorporated city or town.

Housing types

Discrimination against housing types by local authorities is restricted by SB 269. Under its provisions, master plans cannot exclude a housing type unless the planning board involved declares that such housing is injurious to public health, safety, and welfare. The act also requires master plans to include a housing study encompassing surveys and reports of housing conditions, needs and family income as a means of establishing housing standards, and presently available housing and construction methods. Perhaps, mandatory studies for master plans should also include site conditions, flood prevention, surveys and growth, densities, sewage and disposal facilities, conservation of water, soil, agricultural and mineral resources, and public institutions. Although the act probably was drafted to stop the exclusion of mobile homes, it also could be used to bolster the case of one who planned to erect a house of any innovative design.

Water

Appropriation and use

One of the most important pieces of state water legislation is the new Water Use Act. SB 444 established a state system for appropriation and use of all water including, very importantly, geothermal water.

The act encourages wise use of all waters by making them available for appropriation for beneficial uses. Beneficial uses are defined to include fish, wildlife, and recreation, as well as traditional uses--agricultural, domestic, industrial, municipal, and power. An appropriation does not necessarily involve diversion, impoundment, or withdrawal, because provisions of the act establish a somewhat cumbersome procedure by which state agencies can reserve water for in-stream uses.

The applying state agency--unlike other water users--must pay all costs (hearings, investigations, and records) incurred in considering an application for a reservation. In addition, the applicant must establish the public interest and need of the reservation and the amount of water needed for its purpose. The public need and interest in the reservation cannot affect any existing water rights. Beyond that, the Board of Natural Resources must review all reservations of water every 10 years to insure that objectives of the reservations are being met.

The act also establishes a state-level filing and adjudication system for all water appropriations, pursuant to the new state constitution. This is crucial since Montana's water rights situation has long been unclear. With impending coal development and its potentially exorbitant water demands, it is important that Montana's water regulations be in order. It is vital to know the needs of aquatic life, wildlife, and the stream ecosystem, agriculturalists, recreationalists, and other users in order to establish whether room exists for other water demands.

Water quality

State water quality law was amended to comply with the federal Water Pollution Control Act of 1972. Definitions of performance and effluent standards were added to reflect federal intent to require best available technology with a zero discharge goal, as well as to regulate quantity and rate of effluent and ambient water quality. State Board of Health powers are amended to require the establishment and publication of pretreatment standards for wastewater discharged into municipal disposal systems, effluent standards, and performance standards. Additional sections provide for monitoring, inspections, enforcement, penalties, and emergency powers.

Floodway management

The 1971 Floodway Management Act is potentially a momentous piece of critical areas legislation. It was amended in the 1973 session, pursuant to EQC recommendation, from a 50-year flood standard to a 100-year standard. The 50-year standard precluded the Department of Natural Resources and Conservation from using existing Corps of Engineers floodway delineation studies, which are drawn for 100-year floods.

The law had been scarcely implemented because of the added expense of duplicating ground covered by the corps. The new amendment should rectify that. In response to criticism, the department has strengthened new regulations to place more emphasis on the nonstructural alternatives to flood control and the environmental needs of watercourses for flooding.

Wildlife

Wildlife received further attention from the legislature. As mentioned above, wildlife is to be considered in Department of Health and Environmental Sciences decisions on subdivisions (HB 465), and might be protected by reservations in the Water Use Act (SB 444).

Wildlife conservation

The Nongame and Endangered Species Conservation Act establishes state policy to insure the perpetuation of nongame as well as game animals. HB 205 requires the Department of Fish and Game to thoroughly investigate the status of game and nongame species and to submit biennial reports listing species and subspecies endangered within the state. Animals placed on this list or on the U.S. lists of foreign and native endangered species are protected from taking, possession, or sale unless authorized by the department for scientific, educational, or propagation purposes.

The criteria for determining the status of species reflect a broad ecological outlook: destruction, drastic modification, or curtailment of habitat; overutilization for scientific, commercial, or sporting purposes; disease, pollution, or predatory-effects; and other natural or man-made factors affecting the survival prospects of the species. The act also authorizes land and aquatic habitat acquisition as necessary for protection of endangered species.

The act is enforceable by any peace officer. Violations are a misdemeanor.

Vehicle restrictions

Hunters are prohibited by HB 126 from driving motorized vehicles off established roads or trails, except to retrieve downed big game. Also prohibited are harassing, molesting, or flushing of game birds or animals with a motor-driven vehicle. Retired cropland, brush, sloughs, timber, or open prairie can be traversed only on established roads or trails unless the hunter secures the landowner's written permission. Although it may be difficult to determine what constitutes an established road or trail, HB 126 is a good first step toward preventing abuses in off-road motor vehicle operation.

Goat licenses

A seven-year waiting period is provided in HB 245 for anyone securing a mountain goat license. The mountain goat joined the grizzly bear, moose, mountain sheep, and oddly, the bison in this category.

Others

Additional environment-related measures enacted by the legislature include:

Special land site preservation

An important step toward the preservation of historic, archaelogic, and cultural values was the enactment of SB 300. The State Antiquities Act provides for identification, acquisition, restoration, and preservation of such sites. The Board of Land Commissioners designates areas on state lands for registration. Upon registration, the sites are protected from destruction. Removals, excavation, or restoration activities are prohibited without a permit from the Department of Fish and Game. Specimens and data collected under a permit are state property since the permits are issued to disseminate knowledge about cultural properties. The fish and game department is empowered to enter into cooperative agreements with private landowners, including agreements to register sites. Other provisions in the bill stipulate enforcement procedures and sanctions and the discretionary authority to appoint an advisory council to assist state agencies involved.

Weather modification

By enacting HB 335, the legislature permitted more extensive research and experimentation in weather modification. The Board of Natural Resources and Conservation is the reviewing agency for all weather modification permits. The Department of Natural Resources and Conservation has the discretionary authority to determine if a public hearing on a permit application is necessary.

The department also is directed to promote continued research and development of weather modification while identifying and evaluating environmental and socio-economic effects. Because of substantial effects HB 335 merits environmental scrutiny and monitoring.

Noxious weed control

The mandatory noxious weed control program was extended in HB 74 to include eradication of weed and seed along public streets, alleys, and municipally owned land. These locally operated control programs need careful environmental assessment to insure against unacceptable effects.

Junked motor vehicles

HB 112 regulates junked motor vehicles. The act establishes an annual motor vehicle disposal fee to $2 to cover costs of administration. All passenger cars and trucks up to 8,000 lbs. gross vehicle weight (GVW) are required to pay this fee at registration. The Department of Health and Environmental Sciences licenses all motor vehicle wrecking facilities dealing with four or more vehicles a year.

Counties are required to acquire and maintain property for free disposal of junked vehicles. When 200 vehicles have accumulated, the county must notify the department for disposal. The department also can contract with a private facility for the removal of 200 or more vehicles.

Funds collected by the department from the resale of junked vehicles are earmarked for further regulatory activities. The department also is given broad authority to adopt regulations controlling junked vehicles in locations other than wrecking facilities.

Development funds transfers

Needed flexibility in the administration of state lands was clarified by HB 113. Some income derived from state lands is used to develop other lands in the same trust, with the intention of realizing a higher income potential. However, it was uncertain if monies beyond those available from the same trust account could be used. HB 113 permits the Board of Land Commissioners to transfer development funds from one trust to another as needed.

Hold-over Bills

Some very significant concepts are contained in measures held over during the 1973-74 legislative interim. Among these are SB 449, dealing with critical areas of concern for statewide land use regulation; HB 88, giving citizens, corporations, agencies, cities, counties, and others the standing to sue any administrative agency for decisions in which damage to the environment is o might be at issue; HB 550, authorizing counties to adopt shoreland protection regulations with state back-up; HB 133, establishing scenic waterways--the controversial bill is being redrafted by a special legislative subcommittee; SB 405, authorizing the Department of Natural Resources and Conservation to regulate forestry practices on private lands; HB 568, dealing with public access to state lands, SB 188, requiring corporate disclosure of the content of emissions and effluent; HB 474, broadening the application of the stream preservation act to cover private modification of streams; and HB 628, establishing a state natural areas system. Besides these measures, some state agency recodification bills are in hold-over status. These bills, necessitated by the Executive Reorganization of 1971 contain the enabling authority for state departments and deserve careful attention. Concerned environmental groups and citizens have the opportunity to review these and other hold-over bills and prepare for the deliberations of the next session.

CITIZENS AND ENVIRONMENTAL QUALITY

by

Rick Applegate
Research Consultant

Introduction

During the past year, citizen environmental groups continued to play an important role in environmental decision-making. A number of agencies still complain that citizen involvement appears sparse or at least sporadic. Citizens counter that their input often is not sought until agencies have committed themselves to courses of action and that, if sought, their views can be easily ignored. The Montana Environmental Policy Act is directed at solving this problem and is helping to ensure timely and effective public involvement. However, some agencies still do not have updated lists of concerned citizens and groups for environmental impact statement circulation; as these are developed, more fruitful assessment of the quality of citizen participation will be possible. In the meantime, activities of some of Montana's citizen environmental groups can be discussed. The following listing is incomplete and is intended only to indicate the range of citizen environmental activity. Omission of certain groups does not indicate lack of activity or interest.

Recent Montana Citizen Advocacy

The Montana Wilderness Association (MWA) continued as one of the state's largest, most active environmental groups. In the face of rapidly proliferating federal review of national forest lands for wilderness candidacy and multiple use planning, the association appointed local chairmen for Montana's national forests and for specific major issues such as the Absaroka-Beartooth wilderness proposal[9] and the Spanish Peaks Primitive Area. The association also showed its concern for issues not so directly related to wilderness preservation. For example, MWA became plaintiff in litigation against a rural subdivision in Gallatin County.

Another successful group in the state is the Northern Plains Resource Council. Northern Plains began as a group of ranchers deeply concerned about the strip mining of eastern Montana lands and has become a leading force in coal/energy issues. The group was an active lobby during the last legislative session and has pressed agency personnel to implement enacted legislation. The council's newsletter, the Plains Truth, is an excellent source of information on coal-related activities. The council currently is investigating strengthening its ties with other Montana environmental groups.

Trout Unlimited (TU) has been especially active in efforts to amend the state's Stream Preservation Act. A lobbyist for TU spent considerable time during the last legislative session working on scenic waterways legislation. The group is now initiating a program to increase its effectiveness on a broad range of environmental issues and may employ an executive secretary to assist its state council.

During the last legislative session, a coalition of environmental groups organized the Environmental Lobby. It actively lobbied on nearly all environmental issues before the legislature and established a phone network to facilitate communication between environmentalists during the busy session.

This lobbying effort will be pursued in the coming legislative session and will be further aided by the newly organized Helena Environmental

Operations Center. The center is designed as a clearinghouse for environmental groups on a year-round basis. It will perform critical functions including: maintaining an office and library in Helena [illegible] files on legislation and environmental issues; screening state agency files and activities; monitoring the legislature; advising citizen groups on lobbying, testifying, and conducting state agency reviews; and establishing more effective and immediate communications between environmentalists.

Another new group, recently formed in response to rampant land development in the Flathead Valley, is Flathead Tomorrow. Primary concerns of the organization include; the monitoring and control of subdivision and recreational/second-home development; the protection of Flathead drainage water quality; the mobilization of an alert and involved citizenry; and continuous review of public officials vested with environmental decision-making authority.

The controversy over current United States Forest Service (USFS) multiple use planning led to the formation of the Cedar Basset Action Group (CBAG) in the Paradise Valley south of Livingston. The immediate point of contention is the USFS proposal to road and log a corner of the North Absaroka roadless area. CBAG has joined the state Department of Fish and Game in criticizing the USFS for not adequately considering the wildlife effects of the proposal; more specifically, the migratory patterns of the Yellowstone elk herd. CBAG also contends that the Cedar Basset area was erroneously excluded from the USFS inventory of roadless areas compiled last year.

The National Forest Preservation Group (NFPG) also maintained its pressure on the Forest Service and the state Department of Highways.

The group recently prevailed in litigation forcing lower courts to review the administrative procedures in the USFS-Burlington Northern (Big Sky) land exchange. The exchange was further brought to national prominence when, during the Watergate hearings, it was revealed that there may have been some capricious administrative action in the exchange decisions. NFPG is using that information in prosecuting its case. NFPG also was successful in recent litigation proscribing the publicly funded construction of a primary spur road to the Big Sky development.

The increased probability of coal/energy development on one or more of the Indian reservations has led to heightened concern on both the Northern Cheyenne and the Crow reservations. The Northern Cheyenne Landowners Association was instrumental in the recent tribal council demand for termination of allegedly illegal permit and leasing activity on the reservation. Members of the Crow tribe are proceeding in a similar fashion in an effort to assure that the principles of Indian self-government, tribal sovereignty, and cultural diversity are not overlooked in coal/energy decision-making.

Both the League of Women Voters (LWV) and the American Association of University Women (AAUW) continued to expand their environmental activities. The groups testified on a number of issues in the last legislative session--weather modification, coal development moratorium, strip mining regulation, and subdivision controls. The league recently became plaintiff with the Sierra Club and other groups in an effort to halt coal mining activities pending the preparation of a comprehensive federal environmental impact statement. LWV is also initiating a land use policy study. AAUW is conducting a tour of the coal country in an effort to inform its members firsthand of the serious and unanswered questions surrounding coal development.

The League of Conservation Voters (LCV) continued its efforts to provide voter information on candidates and elected officials, including voting records and ratings. In the future, LCV will be assisted by the newly formed Montana Committee for Public Information. This committee, a coalition of low-income, social service, and environmental groups, is compiling voting records and legislative profiles from the 1973 legislature. These were discussed at a fall conference on political power in Montana.

The Student Environmental Research Center (SERC), funded by the Associated Students of the University of Montana, was active in air and water quality studies in the Missoula area and prepared a number of analyses of the environmental effects of coal/energy development. SERC provides an effective forum for student research and advocacy.

The Northern Rockies Action Group (NRAG) was formed in early July to back up citizen environmental groups in Montana, Idaho, and Wyoming. The group uses a team approach stressing four major skills: legal, research, fund-raising, and organizing. Goals of NRAG include: focus primarily on environmental issues that have social equity aspects; aid in the development of an environmental ethic; broaden effective citizen involvement in environmental decision-making; and create a new prototype for effecting social change. The group's current activities include research on possible hard rock mining near Bull Lake in northwestern Montana and elsewhere; assistance on coal and land use issues on the Blackfeet, Northern Cheyenne, and Crow reservations; research on conservation easements; participation in the Yellowstone River study conducted by the

Bureau of Outdoor Recreation; aid in the establishment of the Helena Environmental Operations Center and the Idaho Environmental Lobby; and assistance to Flathead Lakers, the Northern Plains Resource Council, and Trout Unlimited.

Citizen Participation and the Legislature

Citizen participation can be encouraged or discouraged by the legislature. In general, the rules of the last session, providing for open committee meetings, helped citizens follow deliberations more closely. However, groups and individuals should attend not only the committee hearings at which testimony is taken, but also the meeting at which the committees deliberate on bills. In addition, the legislative rule providing three-day consecutive notice prior to receiving testimony on a bill was weakened by the fact that the rule did not specify full 72-hour notice. For example, under the 1973 rule, a committe could post a hearing notice at 4:30 p.m. Wednesday and conduct the hearing at 8 a.m. Friday. Increased attention to citizen participation was indicated in several measures enacted by the 1973 legislature.

The Utility Siting Act (HB 127)9/ contains some explicit citizen participation procedures. For example, applications for facilities certification must be accompanied by proof that public notice has been given to affected municipalities and has been published in "such newspapers as will serve substantially to inform" persons residing in those municipalities. Amendments to applications also require public notice.

A more important provision is the definition of "parties" in a certification proceeding. They include the applicant, affected municipalities, and government agencies; residents of such municipalities;

and "any nonprofit organization, formed in whole or in part to promote conservation or natural beauty, to protect the environment, personal health, or other biological values, to preserve historic sites, to promote consumer interests, to represent commercial and industrial groups, or to promote the orderly development of the areas in which the facility is to be located; or any other interested person..." In other words, nearly everyone, including citizen environmental groups, can become parties to utility siting proceedings. However, a crucial subsequent provision stipulates that ~~a party is~~ parties are presumed to have waived ~~its~~ their right to be a party if ~~it does~~ they do not participate orally at hearings held on the department's findings or on application for amendment. That is, ~~a party~~ parties could lose ~~its~~ their right to intervene or litigate if ~~it does~~ they do not testify.

During a public hearing on the facility application, the common law and statutory rules of evidence do not apply. This was done to encourage expressions of public opinion as well as technical data. In addition, cross-examination will not occur at the hearings.

A party aggrieved by a final decision on a facility may obtain judicial review in state district court. Additionally, residents who believe the Utility Siting Act is not being enforced can subscribe a sworn statement bringing the alleged violation to the attention of the public official responsible for enforcement. Should the public official then refuse or neglect to enforce the law, the resident can bring a mandamus action in the district court of the first judicial district (Lewis and Clark County).

The Montana Strip Mining and Reclamation Act is less specific on citizen participation. Applicants for mining permits must include the name and date of a daily newspaper of general county-wide circulation in which the applicant has prominently published an announcement of his application. Residents can pursue agency nonenforcement in a manner similar to that of HB 127. Hearings are required when the Board of Land Commissioners decides remedial measures are necessary to comply with the act or when the board decides to revoke a permit.

Beyond the above, no comprehensive statutory effort has been made to implement the new constitutional provisions covering the right to know and the right of participation. (An attorney general's opinion on the new right-to-know provision--exempting from scrutiny corporate information on file with government agencies--has come under fire but is as yet without definitive resolution.) The broad wording of the two provisions invites innovative implementation to guarantee the effectiveness of citizen access to governmental processes.

Citizen Suits

As noted above, some citizen environmental groups have been involved in litigation on a variety of issues. A number of difficulties attend the use of citizen suits in pursuit of environmental quality. One of the most immediate and critical difficulties concerns the legal notion of "standing to sue." The determination of standing is the court's effort to decide who is an appropriate party to be heard in an action--to decide that there is a genuine case or controversy. Standing to sue has been decided primarily by the courts and developed through a long history of cases.

Several states--Connecticut, Michigan, Indiana, Florida, Minnesota, and Massachusetts--have adopted statutes to expand and clarify the developing common law. Congress is currently considering a citizen suit measure. Montana has not adopted such a law. In the 1971 legislative session, the

Senate passed a measure allowing citizen suits that the House of Representatives killed. By 1973 the tables were turned: the House passed a measure only to have it defeated in the Senate. The 19[illegible] [illegible] will debate the question again when hold-over HB 55, "The Montana Environmental Protection Act," is considered.

Although Montana has not adopted a liberalized standing statute, the new Criminal Code enacted by the last legislature significantly broadens the definition of public nuisances and the persons who may abate them:

> 94-8-107. Public nuisance. (1) 'Public nuisance' means: (a) a condition which endangers safety or health, is offensive to the senses, or obstructs the free use of property, so as to interfere with the comfortable enjoyment of life or property by an entire community or neighborhood, or any considerable number of persons.... (5). Action to abate a public nuisance. (a) Every premise upon which a public nuisance is being maintained may be abated, and the persons maintaining such nuisance and the possessor who permits the same to be maintained may be enjoined from such conduct by an action in equity in the name of the state of Montana by the county attorney, or any resident of the state. (5).

Prior to the enactment of this statute, a person could generally abate a public nuisance only if he could show injury beyond that sustained by society in general. This change expands an important legal handle for citizen suits. The Criminal Code goes into effect on January 1, 1974.

Montana has no generalized standing law, but one of the leading environmental cases on standing was decided in U.S. district court in

Montana. In 1970, the Environmental Defense Fund, Inc., (EDF) filed an action against the Hoerner-Waldorf Corporation of Missoula alleging excessiv emission of sulfur compounds and other substances (4). EDF alleged that the constitutional rights of the persons suing were being violated. Judge Murray, who granted standing to bring the action; stated:

> 'I have no difficulty in finding that the right to life and liberty and property are constitutionally protected. Indeed, the Fifth and Fourteenth Amendments provide that those rights may not be denied without due process of law, and surely a person's health is what, in most significant degree, sustains life. So it seems to me that each of us is constitutionally protected in our natural and personal state of health.

Since both the Fifth and Fourteenth Amendments to the U.S. Constitution bind only governmental action, the court dismissed the action for lack of allegin governmental action (6). However, the wording of the judge's grant of standing is important.

Research has been done on the basic question of whether citizen actions will flood the courts with litigation or harassment suits (3). A recent study by the Consumer Interest Federation surveyed the attorneys general (or other public officials) in states having citizen suit laws. The results were consistent and unanimous. No state felt overburdened by the legislatio A Massachusetts assistant attorney general responded, "I can categorically state that the idea that there would be a flood of cases is a myth that has been exploded." The attorney for the Florida Department of Pollution Control stated that "the number of suits has not clogged the courts. It is too expensive and time consuming a process for frivolous suits to be brought.

Joseph Sax, author of the Michigan Environmental Protection Act, recently wrote that "enough cases have been resolved speedily and intelligently to mark the Act as a success." (7). His statement is endorsed by Michigan's present Attorney General Charles Alpert (3).

Experience such as this should help reduce the unsubstantiated fears about legislation granting citizens the standing to sue.

The United States Supreme Court recently had its first occasion to rule directly on citizen standing to raise litigable environmental questions. Environmentalists and industry had awaited the decision with interest. The Sierra Club filed an action seeking to enjoin federal permits granted to Walt Disney Enterprises, Inc. (8). The Forest Service had issued permits for the construction of a $35 million complex of motels, restaurants swimming pools, parking lots, and other structures on Forest Service land in the Mineral King Valley of California. The Sierra Club did not allege that its members were users of the valley or that they would be adversely affected in their aesthetic and recreational use of the area. The U.S. district court granted standing and a temporary restraining order; the Court of Appeals denied standing and threw out the order. So the matter proceeded to the U.S. Supreme Court on appeal. The Supreme Court ruled that a party must allege direct injury to his own interests (including recreation or conservation interests). Thus, the Supreme Court (by 4-3 decision) upheld the ruling of the appeals court. However, the court invited the club to amend its complaint to include the proper pleadings. At this time, the matter is being reintroduced to the courts.

The importance of the case for citizen environmental groups is the court's ruling that standing, and hence the right to sue, will be granted to those environmental groups who show an injured interest--economic or otherwise. The federal case law had not been tested on this point before. It is equally important that a sizeable minority of the court would have gone further, granting to any sincere, dedicated, and established conservation group the status of plaintiff in an environmental action. Justice Douglas would admit recognized groups to represent the environment itself; in essence, he would grant standing to trees, a novel and compelling notion (9).

The above rulings are only two indications that the citizen law suit will become a permanent feature of citizen environmental activities.

Citizens and the Pursuit of Environmentally Sound Life Styles

One other somewhat neglected area of citizen activity needs mention. Although part of the pursuit of an environmental ethic can be effected through public advocacy activities of the type described above, a good portion of the ethical questions are matters of personal and collective life-style change. Although the impact of personal or group life-style changes are often derogated, serious analyses of their long term potential have yet to appear. There is a substantial and unrecognized possibility for fundamental alteration in the areas of consumer demand, consumption habits, use patterns of residential and commercial appliances, residual disposal practices, and transportation habits. Given the recent insight that an economic system shares some of the complex and newly recognized interdependencies of ecosystems, the ultimate effects of altering life-styles could be as far-reaching as even the most substantial legislative changes.

The EQC's First Annual Report noted that the Falls Creek Project was actively working on environmentally sound life styles. Aside from that group, the Round River environmental education experiment at the University of Montana, and the recent appearance of recycling centers in several Montana cities, there are no ~~public~~ established examples of alternative life styles in the state. The pursuit of personal and cultural changes--using Montana's rich cultural diversity as a starting point--would be a very important complement to the advocacy work being done by Montana environmental groups.

Conclusion

Keith Caldwell has aptly summarized the challenge of citizen efforts in environmental decision-making:

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> "The high level of public indignation that environmental catastrophe arouses cannot indefinitely be sustained, whereas the activities and behaviors that destroy environmental quality proceed for the most part unremittingly and with powerful economic incentives and assistance. Social concern with the state of the environment cannot have continuing effect unless it is institutionalized. For protection of the environment to be effective, it must be established as a continuing public function--not merely reactive to disaster but anticipatory of possible threats. To become an effective public function, environmental management must obtain the type of institutional and organizational resources to enable it to develop and maintain a broad public constituency. Only in this

> way can the role of government be sustained in competition
> with other public needs and functions. (?)"

[illegible] citizen environmental activities--public advocacy and personal/cultural changes--will continue to determine the success or failure of the important public pursuit of environmental quality.

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THE ARBITER PROCESS OF COPPER REDUCTION

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by

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The Arbiter process is a unique hydrometallurgical process developed by the Anaconda Company for extracting copper from copper concentrates, using a low-temperature and low-pressure ammonia leach. Unlike a conventional pyrometallurgical process, this process does not emit significant quantities of gas or dust to the atmosphere. Instead, all waste products are carried in solution to a tailings pond.

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In a conventional pyrometallurgical process, copper concentrates are fed to roasters to form a calcine. The calcine is then fed to a reverbatory furnace and then to the converters, where gases and particulates are discharged to the atmosphere via a stack. The output of the converter is impure blister copper that is subsequently purified in an electrolytic process.

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In the Arbiter process, the sulphide concentrates are leached with ammoni in the presence of gaseous oxygen at a pressure of 5 pounds per square inch (ps and at a temperature of 75 degrees Fahrenheit. The copper bearing solution (ammonium sulfate) is treated by solvent extraction in a liquid ion-exchange circuit, and the resulting liquor is sent to an electrolytic process where pure copper metal is recovered in cathode form. Sulfur is removed from the process as ammonium sulfate solution, formed during this process. The solutio is mixed with lime to form gypsum, which is subsequently added to the tailings and discharged to a tailings pond. Large quantities of live steam are used to boil off free ammonia from the residual solution for recovery and reuse in the leach reactors. The efficiency of the copper extraction process is about

98 percent, whereas the ammonia recovery is about 95 percent efficient (3).

A $22 million ~~(2)~~ prototype plant that will employ the Arbiter process is under construction at Anaconda, Montana, in the vicinity of the existing pyrometallurgical plant, and is scheduled for completion in September 9 1974(2). This plant is scheduled to handle 560 ton/day of low grade, high sulfide (32 percent) concentrates from the Butte and Victoria operations. It will produce 100 ton/day of metallic copper of a quality equal to ~~the~~ that produced by the pyrometallurgical plant (1).

Because of a recent increase in Anaconda's production quota, the company currently plans to operate both the existing plant and the Arbiter plant at capacity (4). Thus, it is unlikely that the present level of air pollution in the vicinity of Anaconda will show a net decrease from operating the Arbiter plant. However, this new facility will enable increase in production without further degradation of air quality.

In addition to the ammonia leach, ammonia recovery, and solvent extraction circuits, the principal components of the Arbiter plant are the ammonia vent system, the oxygen generating plant, the boiler plant, the lead anode casting facility, the water supply system, and the waste disposal system.

Ammonia vented from equipment in the leach circuit is contacted with fresh water in a single packed tower scrubber and ultimately returned to the leach reactor. The efficiency of the tower is 99 percent, allowing 1 percent to escape to atmosphere (5).

The oxygen plant generates the oxygen used in the leach operation. The plant will produce 115 ton/day of gaseous oxygen at 40 psi and 5 ton/day of liquid oxygen. The compressor for this process is powered by a 3,000 horsepower electric motor (5).

The boiler plant produces the steam required for ammonia recovery. The plant will consume an estimated 5 million cubic feet of gas a day to produce about 10 pounds of steam required for each pound of ammonia recovered. If necessary, ~~No. 2~~ [illegible] fuel could be used in lieu of gas (5).

The anode casting facility will cast the lead anodes to be used in the electrolytic process. The plant also is fired with natural gas and is designed to cast a complete inventory of 8,000 anodes in 60 days; however, since the life of the anodes is expected to be from two to five years, the plant is expected to be used infrequently (5).

The Arbiter plant will consume between 4.7 and 7.3 million gallons of water a day (5), which is about 60 percent as much water as will be required by Colstrip generating plants 1 and 2. However, it is anticipated that changes in the water distribution systems at both the weed concentrator and the existing smelter will reduce water consumption by these facilities. This reduction should offset the requirement for the Arbiter plant, hence the net consumption should remain essentially unchanged (4). This water is supplied from Warm Springs Creek at Meyers Dam.

The existing tailings pond system consists of 4,200 acres of ponds that are 60 percent full of tailings. A network of diversion ditches conveys 20 million gallons of water a day from the existing smelter and the Anaconda city sewer system for dust control and revegetation on these ponds. The effluent from these ponds is ultimately discharged to Silver Bow Creek, which flows into the Clark Fork River (5).

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A new pond, sealed with bentonite clay, will be constructed to accept the slurry discharged from the Arbiter plant. This pond is connected to existing ponds 1 and 2, which will be isolated from the rest of the existing pond system.

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The material breakdown of the slurry discharge from the Arbiter process is estimated to be (5):

+7	Calcium	8,000 lb/day
+7	Sulfates	10,000
+7	Copper	2.7
+7	Zinc	1.6
+7	Nitrogen	1,200 (maximum)

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Of the nitrogenous material, 400 lb/day are sulfamate, 750 are ammonia, and 50 are ammonium.

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The actual reduction of nitrogen through the existing pond system cannot be accurately assessed now. However, since it is unlikely that there will be sufficient organisms in the system to reduce the ammonia content of the effluent and since ammonia losses to the atmosphere are likely to be the only significant loss, the effectiveness of the existing pond system in reducing ammonia is questionable. Therefore, to preclude the possibility of discharging nitrogenous material to Silver Bow Creek, the liquid from ponds 1 and 2 will be disposed of by evaporation (4).

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The new pond, together with ponds 1 and 2, should accommodate the plant discharge for about two years at the anticipated rate of production. During this period, a test program will be established to study various methods for disposal of effluents and to determine the potential for serious water pollution. The test program will include laboratory analysis of the discharge material, bioassays using fish, and greenhouse tests. Also, as part of this program, a series of test wells will be drilled in the vicinity of the pond system to monitor the quality of the groundwater and the level of the water table (4).

At the conclusion of the two-year study period, the method for waste disposal will be reevaluated. If it is deemed that a serious potential for water pollution does not exist, ponds 1 and 2 may be allowed to spill to the rest of the existing pond system and ultimately discharge to Silver Bow Creek. However, if it is determined that a pollution hazard does exist, then an alternate method of disposal must be selected or a change must be made in the method of removing sulfur from the process.

Methods of treatment for removing sulfates and nitrogenous compounds from the effluent would be very costly and are not presently considered by the Anaconda Company for this installation.

According to Dr. Arbiter (1), there are two alternatives to the lime-boil method of sulfur disposal currently planned for the plant at Anaconda.

One technique converts the waste product to ammonia and elemental sulfur. Plants in Europe are being designed for this method, and the Anaconda Company is studying the economics of employing it in this country.

The other technique is to crystallize out ammonium sulfate and market this byproduct. This method would require less steam and no lime. There woul be less investment, less energy required, and no waste disposal problems resulting from nitrogenous material. Obviously, this alternative would also conserve natural gas (or oil) and water. Dr. Arbiter stated that this method was preferred but that it would not be used at the Anaconda plant because there was no market for the byproduct in the area.

Based on pilot plant operations, it appears that airborne emission concentrations from the Arbiter plant will be insignificant. The principal source points for emissions are: the stacks on electrowinning tank house, the boiler stacks, the ammonia scrubber stack, and the stack and roof exhausters on the anode casting facility (5).

Sulfuric acid mist generated in the electrowinning process probably would be the only emission noticeable, but atmospheric concentrations are expected to be considerably below the state standard of 4 ug/m^3 (micro-grams per cubic meter) for an annual average. During a normal operation, less than 0.75 lb/hr of acid mist will be discharged to the atmosphere via four tall stacks in the roof of the electrowinning tank house (5).

If natural gas is used to fire the boilers, nitrous oxide (44 lb/hr) will be the only emission from the boiler stacks; however, if ~~No.~~ Number 2 fuel is burned, sulfur dioxide (6 lb/hr) and particulates (6 lb/hr) will also be emitted (5).

It is anticipated that less than 9 lb/hr of ammonia will be released to the atmosphere via the scrubber stack (5).

The anode casting facility is equipped with a baghouse, for particulate retention, and a 75-foot stack. Particulate emission from the baghouse to the atmosphere is expected to by 0.1 lb/hr or less, which represents a control efficiency of 99.5 percent (5).

The Anaconda Company has applied to the Montana Air Quality Bureau for a permit to build the portion of the plant associated with airborne emissions, and it appears that this permit will be granted. Since the slurry discharge will be contained, a discharge permit will not be required before placing the plant into operation. However, if, at the end of the two-year evaluation period, Anaconda elects to allow the effluent to flow to Silver Bow Creek via the pond system, a discharge permit will be required.

The Arbiter plant is definitely a big environmental step in the right direction. The process is also being developed for the recovery of nickel and zinc. Furthermore, because of the ability to handle low grades and high pyritic concentrates the feasibility of processing old tailings is also under study (2). This process has aroused interest among major metal producers, and some are now negotiating with the Anaconda Company for licensing agreements (1). Hopefully, in the near future, the conventional dirty smelting process will be replaced throughout the copper, zinc, and nickel industry, with the cleaner chemical reduction process.

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